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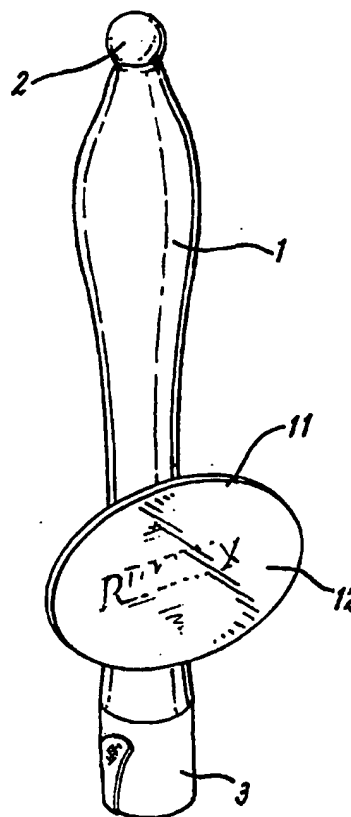
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(54) Title: TAP HANDLE

(57) Abstract

A handle (1) for a beer delivery arrangement has a housing in which part of an electrical circuit and rechargeable batteries are disposed. The circuit includes white light emitting diodes disposed behind a transparent or translucent face (12) in the handle to illuminate the face on receiving power from the batteries. The handle has an adaptor (3) comprising a release mechanism enabling the handle to be detached from the beer delivery system to recharge the batteries and then subsequently reattached. The handle may have contacts for connection into a recharging unit or recharging may be inductive in which case no contacts are required.



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TAP HANDLE

The present invention relates to handles.

Handles often bear advertising and other design material. The size of the material is usually restricted by the size of the handle upon which or
5 around which it is disposed. This in turn reduces the visual impact of the material over what would otherwise be achievable.

According to the present invention there is provided a handle defining a housing, a support attached to or forming part of the handle, the support having or being associated with a front face bearing information, electrical
10 means for illuminating the front face disposed on the support and electrical circuit means for controlling the means for illuminating.

In a preferred embodiment of the invention, the handle comprises means for releasably attaching it to an operating mechanism. The means for releasably attaching may comprise a bayonet fitting or release catches.
15 The means for illuminating are light emitting diodes, advantageously white light emitting diodes. The electrical circuit means comprises rechargeable batteries. The electrical circuit means incorporate means for reducing power consumption by the means for illuminating. The means for reducing power consumption may comprise means for altering the intensity of the
20 illumination and/or means for intermittently switching the illumination on and off. The handle may comprise electrical contacts to enable it to be

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electrically connected to a recharging unit to recharge the batteries. These contacts may be disposed to contact complementary contacts on the recharging unit itself. Alternatively, an inductive contactless battery charging arrangement may be used. The circuit means may comprise means for indicating the charging state of the rechargeable batteries. These means may advantageously be a light emitting diode preferably coloured and preferably disposed in the body of the handle. Means may be provided for preventing operation of the handle when the batteries are discharged. These means may comprise a device which prevents cam action of the handle itself. Advantageously, an electro-mechanical piston or solenoid is incorporated which activates a peg. When the battery is discharged, the peg is inserted into the cam to prevent operation of the handle and when the battery is charged the peg is withdrawn from the cam to permit normal operation. The front face of the housing may be transparent or translucent and illumination may be direct therethrough. Edge lighting using angled edges or specific edge lighting media or reflected or transmitted light may be employed.

In order that the invention may be more clearly understood, embodiments thereof will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a tap handle,

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Figure 2 is a battery charging unit for the handle of figure 1,

Figure 3 shows part of a beer delivery system including a valve mechanism for use with the handle of figure 1,

Figure 4 shows an alternative handle to that shown in figure 1,

5 Figure 5 shows a further alternative handle to that shown in figure 1.

Figure 6 shows a basic circuit diagram, and

Figures 7 and 8 diagrammatically show an alternative battery charging arrangement.

Referring to Figure 1, the tap handle comprises a body 1 defining a
10 housing in which part of an electrical circuit and rechargeable batteries for
powering the circuit (not shown) are disposed. The handle is provided with
a finial 2 at its upper end and a handle/tap cam adaptor 3 at its lower end.
The adaptor comprises a release mechanism which enables the handle to be
attached and detached to and from the beer delivery system part of which
15 is shown in figure 3 and a battery charger which is shown in figure 2. The
release mechanism may comprise a bayonet fitting, or release catches or be
of any other suitable type.

Referring to figure 3, the handle, when attached to the beer delivery
system connect to a boss 4 formed on a cam 5 which is pivotally mounted
20 by means of a pivot pin or screw 6. The beer delivery system incorporates
a lifting valve mechanism 7 which provides a communication between beer

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delivery tube 8 and a pour spout 9. A threaded shank surrounds the tube for fixing it in position usually to the bar. By pivoting the handle on its cam 5 about pin or screw 6 on cam surface 10, the lifting valve mechanism 7 is operated to permit beer to flow from tube 8 to spout 9 in the normal way.

5 Referring to Figure 6, the batteries 20 in the handle supply a circuit comprising a series white light emitting diodes 21 (L.E.D.'s) of either the lens or surface mount type. These diodes 21 are disposed in a "brand" housing 11 affixed to the handle, the front face 12 of the housing being transparent or translucent and carrying the desired brand. The choice of
10 white light emitting diodes is important because it enables most branding colours to be illuminated without having to match colours which may otherwise be necessary with "coloured" sources of illumination. Illumination of the diodes may be continuous, intermittent to give a pulsing or flashing effect sequenced or any combination of these. The illumination provided by
15 diodes 21 may be direct through the front face 12 of the housing which may be plan or in the form of a lens. Edge lighting using angled edges or specific edge light media such as those marketed under the trade marks Luminedge or Elit may be employed. Light may be reflected or transmitted by fibre optic. Battery valves/energy levels or battery life may be varied to
20 meet different applications, brands or customer requirements. The amount of power fed to the diodes 21 may also be controlled by a power control

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device 22. A further preferably coloured light emitting diode 23 is provided to indicate a battery low charge state. This is advantageously disposed in the handle to be externally visible. Instead of a single LED, a series of LEDs may be incorporated indicating full charge, partial charge, battery in use as well as battery discharged. Some or all of the components of the circuit may be mounted on a printed board which may also advantageously be mounted in the handle. With the exception of the light emitting diodes all circuit elements within the handle are concealed.

To recharge the batteries 20 the handle is detached from the cam 5 and inserted into a complementary aperture 30 in the battery charger 31 shown in figure 2. Although only one aperture is shown several such apertures providing for batteries in several handles to be charged simultaneously can be provided. The charger 31 comprises a mains plug 36 and comprises a transformer 32 (see figure 6). Control electronics 33 and appropriate contact connectors 34 to mate with complementary connectors 35 on the handle. The charger may be placed under the bar or other serving counter or any other suitable location where mains power is available. When the batteries are recharged, the handle(s) is/are replaced on the cam(s).

The handle may take many different forms, and the position of the illuminated brand housing on or around the handle or as a handle extension,

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badge or badge arm may be varied as desired. Two alternative forms of handle to that shown in figure 1 are shown in figure 4 and figure 5. In figure 4 two illuminated housings 42 are provided in the handle of figure 4 and one in the handle 52 of figure 5.

5 A contactless battery charging arrangement may be provided as an alternative to that already described with reference to Figure 2. Such a contactless arrangement is shown diagrammatically in Figures 7 and 8. Referring to Figure 7, the lower part of the detachable handle is shown at 40. Within this part 40, a magnetising core 41 is disposed on which a coil 10 42 is supported which is connected to batteries 43. The lower part 40, which is formed as a spigot, fits into a complementary aperture 45 within a charging unit 46 shown in Figure 8. A coil 47 is arranged around this aperture and connected to a power supply 48. In operation, with the spigot 40 of the detachable handle inserted into the aperture 45 of the charging unit and the power supply 48 switched on power is supplied by inductive 15 action via the core 41 and coils 42 and 47 and thence to the battery 43. This negates the need for any direct electrical contact between the two parts of the handle which now require mechanical connection only.

20 A device may be included to prevent operation of the handle when the batteries are discharged. In such an arrangement, an electromechanical piston or solenoid is included in the circuit operative to insert or withdraw

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a locking peg 50 (see Figure 3) into the cam 10. When the batteries are charged the solenoid is activated to withdraw the peg 50 and allow normal operation of the cam 10 and therefor of the valve 7 to allow flow of beer. When the batteries are discharged, the solenoid is deactivated. The peg 50
5 is inserted into the cam to prevent operation of the cam and valve.

It will be appreciated that the above embodiments have been described by way of example only and that many variations are possible without departing from the scope of the invention. For example, the invention is equally applicable to side action tap assemblies.

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CLAIMS

1. A handle defining a housing(11), a support attached to or forming part of the handle, the support having or being associated with a front face (12) bearing information, characterised by electrical means (21) for illuminating the front face (12)disposed on the support and electrical circuit means for controlling the means for illuminating.
2. A handle as claimed in claim 1, in which the handle comprises means for releasably attaching it to an operating mechanism.
3. A handle as claimed in claim 2, in which the means for releasably attaching comprise a bayonet fitting.
4. A handle as claimed in claim 2 or 3, in which the means for releasably attaching comprise release catches.
5. A handle as claimed in claim 1, 2, 3 or 4 in which the means for illuminating comprise light emitting diodes (21).
6. A handle as claimed in claim 5, in which the light emitting diodes are white light emitting diodes (21).
7. A handle as claimed in any preceding claim, in which the electrical circuit means comprises means for recharging (31) rechargeable batteries.
8. A handle as claimed in any preceding claim, in which the electrical circuit means comprises means for reducing power consumption (22) by the means for illuminating.

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9. A handle as claimed in claim 8, in which the means for reducing power consumption (22) comprises means for altering the intensity of the illumination.

5 10. A handle as claimed in claim 8 or 9, in which the means for reducing power consumption comprises means for intermittently switching means for illuminating on and off.

11. A handle as claimed in any preceding claim, comprising electrical contacts (35) enabling the electrical circuit means to be connected to a recharging unit (31).

10 12. A handle as claimed in any of claims 1 to 10, in which the electrical circuit means comprise means (41, 42, 47) enabling power to be transferred inductively.

13. A handle as claimed in any preceding claim, in which the circuit means comprise means for indicating (23) the charging state of rechargeable batteries.

14. A handle as claimed in claim 13, in which the means for indicating comprise a light emitting diode (23).

15 15. A handle as claimed in any preceding claim, in which means (10,50) are provided for locking the handle in an inoperative position under the control of the electrical circuit means.

20 16. A handle as claimed in claim 15, in which the means for locking

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comprise a locking member (50) and a solenoid operative to move the locking member between a first position in which normal operation of the handle is permitted and a second position in which normal operation of the handle is prevented.

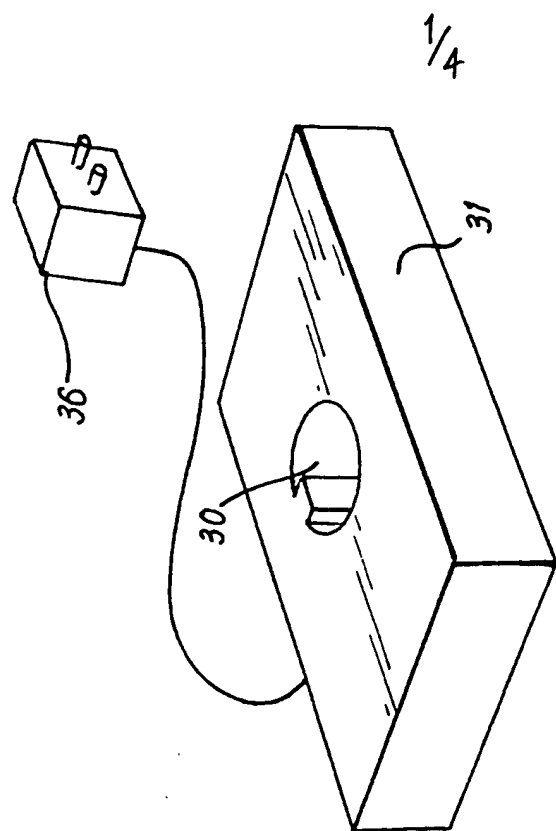


FIG. 2

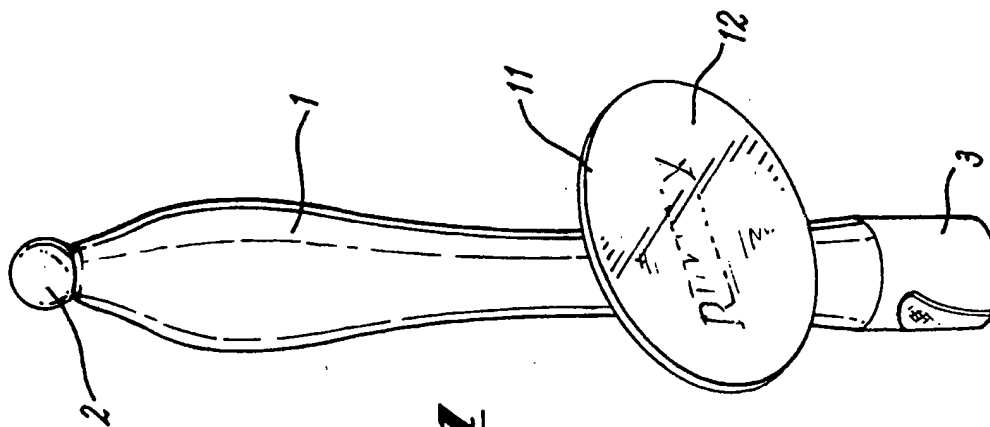


FIG. 1

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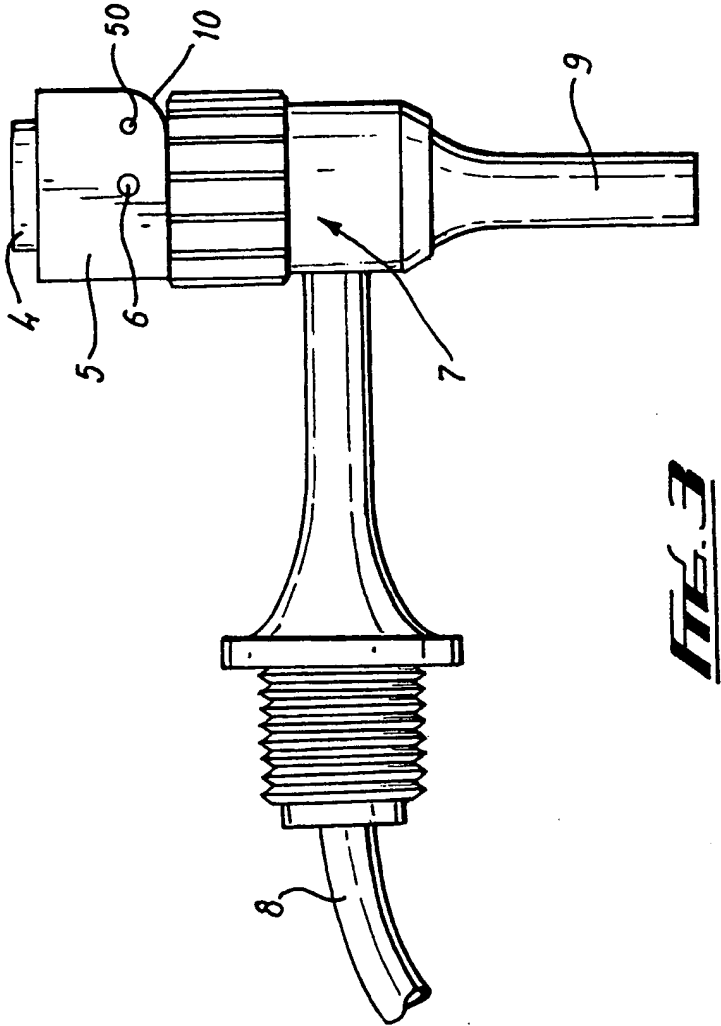


Fig. 3

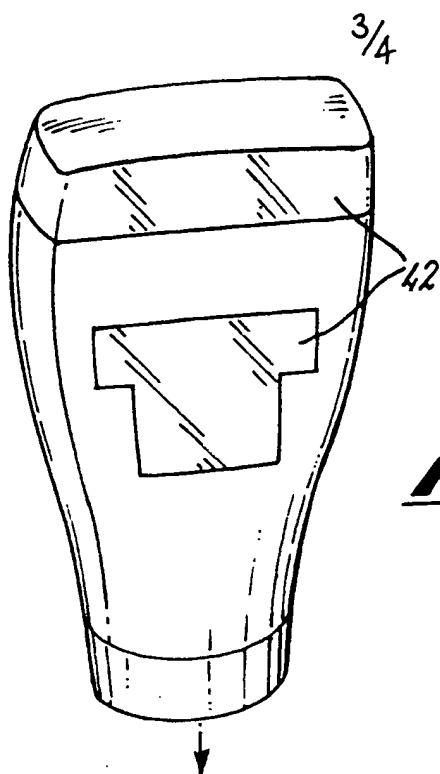


FIG. 4

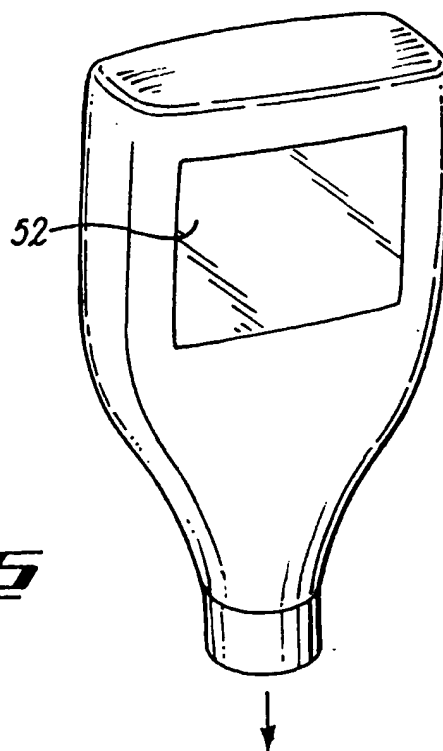


FIG. 5

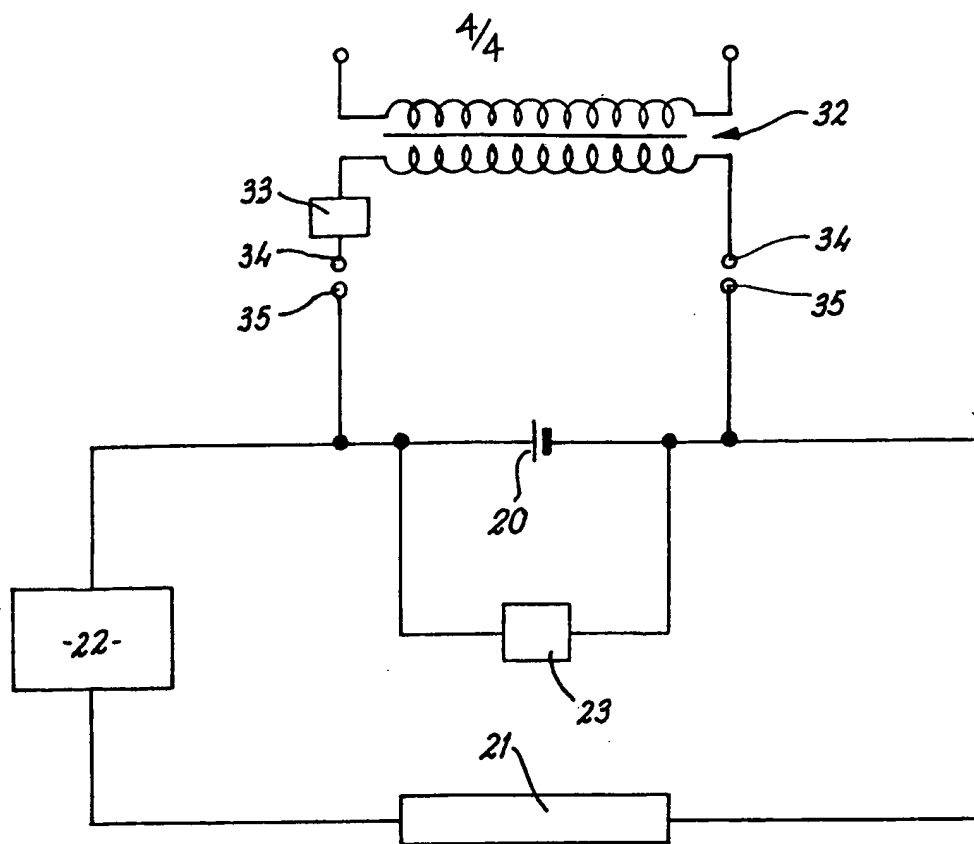


FIG. 6

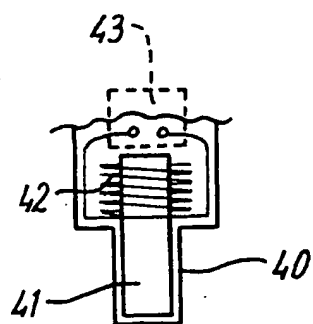


FIG. 7

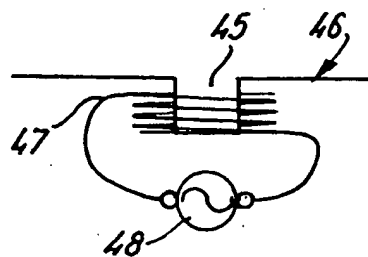


FIG. 8

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 98/03770

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 6 B67D1/08 B67D1/06 G09F23/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 6 B67D G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 412 547 A (HORNBLAD ET AL.) 2 May 1995 see column 2, line 9 - column 3, line 2; figures ---	1,2,7-11
X	WO 96 16894 A (BARTECH CORPORATION) 6 June 1996 see claims 1,10,14; figures ---	1,5,7,8
A	US 4 894 647 A (WALDEN, JR. ET AL) 16 January 1990 see column 2, line 14 - line 17; figure 3 ---	2,3
A	WO 94 04456 A (ALUMASC LTD) 3 March 1994 ---	
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☐ Further documents are listed in the continuation of box C.

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